

THAT WHICH IS CLAIMED

1. A method of preventing secondary bacterial pneumonia in a subject who is afflicted with an influenza infection comprising administering a composition comprising
5 a prophylactically effective amount of a neuraminidase inhibitor to a subject who has been symptomatic for viral influenza for more than 48 hours.

2. The method according to claim 1, wherein the neuraminidase inhibitor is selected from the group consisting of: oseltamivir phosphate, zanamivir and RJW-270201
10 (BCX-1812).

3. The method according to claim 2, wherein the neuraminidase inhibitor is oseltamivir phosphate and the composition is administered orally.

15 4. A method for achieving chemoprophylaxis of pneumonia in a subject who is at risk of developing bacterial pneumonia as a complication of a viral influenza infection comprising administering a prophylactically effective amount of a neuraminidase inhibitor to the subject.

20 5. The method according to claim 4, wherein the neuraminidase inhibitor is administered within 4 days of the subject's exposure to a host afflicted with an influenza viral infection.

25 6. The method according to claim 4, wherein the subject is a human selected from the group consisting of: an individual who is at least 50 years old, an individual who resides in a chronic care facility, an individual who has a chronic disorder of the pulmonary or cardiovascular system, an individual who has required regular medical follow-up or hospitalization during the preceding year because of chronic metabolic diseases (including diabetes mellitus), renal dysfunction, hemoglobinopathies, or
30 immunosuppression (including immunosuppression caused by medications or by human immunodeficiency [HIV] virus); an individual between 6 months and 18 years in age

who is receiving long-term aspirin therapy, an individual less than 14 years of age, and a woman who will be in the second or third trimester of pregnancy during the influenza season.

5 7. The method according to claim 6, wherein the subject is a human over 65 years of age.

 8. The method according to claim 6, wherein the neuraminidase inhibitor is selected from the group consisting of: oseltamivir phosphate, zanamivir and RJW-270201
10 (BCX-1812).

 9. A method for attenuating a secondary infection in a subject infected with an influenza virus comprising administering to the subject an amount of a neuraminidase inhibitor effective to prevent a pathogenic synergism between the virus and a bacterial
15 agent that characteristically promotes a severe bacterial infection wherein the bacterial infection is prevented from disseminating throughout the subject's lung tissue.

 10. The method of claim 9, wherein the pathogenic synergism results from the effects of influenza-virus mediated cleavage of terminal sialic acid from epithelial cells
20 lining the subject's lungs.

 11. The method according to claim 9, wherein the pathogenic synergism results from viral neuraminidase-mediated exposure of pneumococcal receptors on lung epithelial cells.

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 12. The method according to claim 9, wherein the secondary infection is a bacterial infection of the lower respiratory tract mediated by an organism selected from the group consisting of: *Streptococcus pneumoniae*, *Staphylococcus aureus*, *Haemophilus influenzae*, *Mycoplasma species* and *Moraxella catarrhalis*.

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13. The method according to claim 9, wherein effective prevention of pathogenic synergism restricts a lower respiratory tract infection to a focal process that is characteristic of primary pneumococcal pneumonia as opposed to a severe bacterial infection that disseminates throughout the subject's lung tissue.

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14. A method for attenuating a secondary infection in a subject infected with an influenza virus comprising administering to the subject an amount of a neuraminidase inhibitor effective to prevent a pathogenic synergism between the virus and a bacterial agent that characteristically mediates a secondary bacterial infection of the respiratory tract.

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15. The method according to claim 14, wherein the secondary infection is a bacterial infection mediated by an organism selected from the group consisting of: *Streptococcus pneumoniae*, *Staphylococcus aureus*, *Haemophilus influenzae*,
15 *Mycoplasma species* and *Moraxella catarrhalis*.

16. The method according to claim 15, wherein the secondary bacterial infection is bacterial sinusitis.

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17. The method according to claim 15, wherein the secondary infection is otitis media.

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18. A method of treating pneumonia in a subject afflicted concurrently with viral influenza and bacterial pneumonia caused by *Streptococcus pneumoniae* comprising administering a therapeutically effective amount of a neuraminidase inhibitor in combination with a therapeutically effective amount of at least one antibiotic.

19. The method according to claim 18, wherein the subject manifests clinical indicators comprising:

- a. difficulty breathing accompanied by a chest examination that indicates rales;
- b. consolidation on chest x-ray; and
- c. at least one indicator selected from the group consisting of: fever,
5 high white blood cell count, and a productive cough.

20. The method according to claim 19, wherein the subject is symptomatic for influenza for more than 48 hours prior to the administration of the neuraminidase inhibitor and the antibiotic.

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21. The method according to claim 20, wherein the neuraminidase inhibitor is selected from the group consisting of: oseltamivir phosphate, zanamivir and RJW-270201 (BCX-1812).

15 22. The method according to claim 21, wherein the neuraminidase inhibitor is oseltamivir phosphate which is administered orally and the at least one antibiotic is selected from the group consisting of: ceftriaxone, cefotaxime, vancomycin, meropenem, cefepime, ceftazidime, cefuroxime, nafcillin, oxacillin, ampicillin, ticarcillin, ticarcillin/clavulanic acid (Timentin), ampicillin/sulbactam (Unasyn), azithromycin,
20 trimethoprim-sulfamethoxazole, clindamycin, ciprofloxacin, levofloxacin, synergid, amoxicillin, amoxicillin/clavulanic acid (Augmentin), cefuroxime, trimethoprim/sulfamethoxazole, azithromycin, clindamycin, dicloxacillin, ciprofloxacin, levofloxacin, cefixime, cefpodoxime, loracarbef, cefadroxil, cefabutin, cefdinir, and cephradine.

25 23. A method of treating a secondary bacterial infection in a subject who acquires the bacterial infection as a sequelae to a viral influenza infection comprising administering a composition comprising a therapeutically effective amount of a neuraminidase inhibitor in combination with a therapeutically effective amount of at least one antibiotic to a subject who has been symptomatic for influenza for more than 48
30 hours prior to treatment.

24. The method according to claim 23, wherein the secondary bacterial infection is selected from the group consisting of: pneumonia, otitis media and sinusitis.

5 25. The method according to claim 24, wherein pneumonia is mediated by *Streptococcus pneumoniae*.

26. The method according to claim 24, wherein the neuraminidase inhibitor is selected from the group consisting of : oseltamivir phosphate, zanamivir and RJW-
10 270201 (BCX-1812).

27. The method according to claim 26, wherein the neuraminidase inhibitor is oseltamivir phosphate and the at least one antibiotic is selected from the group consisting of: ceftriaxone, cefotaxime, vancomycin, meropenem, cefepime, ceftazidime,
15 cefuroxime, nafcillin, oxacillin, ampicillin, ticarcillin, ticarcillin/clavulanic acid (Timentin), ampicillin/sulbactam (Unasyn), azithromycin, trimethoprim-sulfamethoxazole, clindamycin, ciprofloxacin, levofloxacin, synergid, amoxicillin, amoxicillin/clavulanic acid (Augmentin), cefuroxime, trimethoprim/ sulfamethoxazole, azithromycin, clindamycin, dicloxacillin, ciprofloxacin, levofloxacin, cefixime,
20 cefpodoxime, loracarbef, cefadroxil, cefabutin, cefdinir, and cephradine.